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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/787,217	02/27/2004	Kevin Faulkner	6502.0565	4697

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EXAMINER
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ART UNIT	PAPER NUMBER
2165	

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Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	10/787,217	FAULKNER ET AL.
	Examiner	Art Unit
	Apu M. Mofiz	2165

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on <u>27 February 2004</u>.

2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) <u>1-46</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) <u>1-46</u> is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☒ The drawing(s) filed on <u>27 February 2004</u> is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All b) ☐ Some * c) ☐ None of:

      1. ☐ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____.

      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>05/26/2004</u>.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

Double Patenting

1.   The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).
      A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).
      Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2.   Claims 1-46 are provisionally rejected under the judicially created doctrine of

obviousness-type double patenting as being unpatentable over claims 1-30 of

copending Application No. 10/787,320, claims 1-25 of copending Application No.

10/787,321, claims 1-60 of copending Application No. 10/787,322 and claims 1-37 of

copending Application No. 10/787,324. Although the conflicting claims are not identical,

they are not patentably distinct from each other because the subject matter claimed in

the instant application is fully disclosed in the patent and is covered by the patent since

the patent and the instant application are claiming common subject matter and they are

substantially similar in scope and they use the same limitations, using varying

terminology. They are not patentably distinct from each other because claims 1-30 of

copending Application No. 10/787,320, claims 1-25 of copending Application No.

10/787,321, claims 1-60 of copending Application No. 10/787,322 and claims 1-37 of

copending Application No. 10/787,324 contain every element of claims 1-46 of the

instant specification.

"A later patent claim is not patentably distinct from an earlier patent claim if the

later claim is obvious over, or anticipated by, the earlier claim. In re Longi, 759 F.2d at

896, 225 USPQ at 651."

This is a provisional obviousness-type double patenting rejection because the

conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 102

3.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by
another filed in the United States before the invention by the applicant for patent or (2) a patent
granted on an application for patent by another filed in the United States before the invention by the
applicant for patent, except that an international application filed under the treaty defined in section
351(a) shall have the effects for purposes of this subsection of an application filed in the United States
only if the international application designated the United States and was published under Article 21(2)
of such treaty in the English language.

4.   Claims 1-11,31,32-38 and 46 are rejected under 35 U.S.C. 102(e) as being

anticipated by Varagur Chandrasekaran (U.S. Patent No. 6,948,044 and

Chandrasekaran hereinafter).

As to claim 1,31 and 32, Chandrasekaran teaches a system for providing one or

more virtual volumes (col 3, lines 8-67), comprising: a host system; a set of storage

devices, each of which includes physical block addresses that stores data (col 4, lines

1-56); and a network switch system connecting the host system and the set of storage

devices (col 4, lines 1-56), and configured to define and manage a virtual volume

associated with data distributed across the physical block addresses, the network

switch system (col 4, lines 1-56) including: a first virtualization layer that maintains first

tier objects including information reflecting a relationship between the physical block

addresses and one or more logical partitions of virtual volume data (col 5, lines 1-67),

and a second virtualization layer that maintains second tier objects including information

reflecting a logical configuration of the virtual volume (col 5, lines 1-67), wherein the

network switch system manages the virtual volume for the host system using the first

and second tier objects (col 5, lines 1-67).

As to claims 2 and 33, Chandrasekaran teaches wherein the host system sends

to the network switch system a request to access the virtual volume and the network

switch system leverages the first virtualization layer to collect information associated

with the one or more logical partitions associated with the request (col 5, lines 1-67).

As to claims 3 and 34, Chandrasekaran teaches wherein the second

virtualization layer accesses the first virtualization layer using the second tier mappings

based on a request received from the host system to access information associated

with the one or more logical partitions (col 1, lines 35-67; col 5, lines 1-67).

As to claims 4 and 35, Chandrasekaran teaches wherein the first virtualization

layer includes first tier storage processors that are each selectively connected to one or

more of the storage devices (Fig. 3; Fig. 5; col 1, lines 35-67; col 5, lines 1-67).

As to claims 5 and 36, Chandrasekaran teaches wherein the first tier mappings

include state-based information associated with the logical partitions of the virtual

volume (Fig. 3; Fig. 5; col 1, lines 35-67; col 5, lines 1-67).

As to claims 6 and 37, Chandrasekaran teaches wherein the logical configuration

of the virtual volume is at least one of a mirrored virtual volume configuration, a

concatenation configuration, a striped virtual volume configuration, and a striped over

mirrored virtual volume configuration (Fig. 3; Fig. 5; col 1, lines 35-67; col 5, lines 1-67).

As to claims 7 and 38, Chandrasekaran teaches wherein the first virtualization

layer includes first tier storage processors, each of which includes at least one of (i) a

first tier mapping for the virtual volume and (ii) a second tier mapping (Fig. 3; Fig. 5; col

1, lines 35-67; col 5, lines 1-67).

As to claim 8, Chandrasekaran teaches wherein any first tier storage processor having a second tier mapping and a first tier mappings have communication access to the host system and at least one storage device (Fig. 3; Fig. 5; col 1, lines 35-67; col 5, lines 1-67).

As to claim 9, Chandrasekaran teaches wherein the second virtualization layer includes second tier storage processors, each of which includes one or more of the second tier mappings and each of which are connected to the host system (Fig. 1; Fig. 3; Fig. 5; col 1, lines 35-67; col 5, lines 1-67).

As to claim 10, Chandrasekaran teaches wherein the network switch system includes a set of storage processors separated into first tier storage processors associated with the first virtualization layer and second tier storage processors associated with the second virtualization layer, and wherein the network switch system includes a switching fabric interconnecting the first tier storage processors and the second tier storage processors (Fig.1; Fig. 3; Fig. 5; col 1, lines 35-67; col 5, lines 1-67).

As to claim 11, Chandrasekaran teaches a second host system and wherein the each second tier storage processor is connected to at least one of the host system and the second host system, and wherein the set of storage devices are selectively connected to the first tier storage processors (Fig.1; Fig. 3; Fig. 5; col 1, lines 35-67; col 5, lines 1-67).

As to claim 46, Chandrasekaran teaches wherein managing the virtual volume includes: processing requests from the host system to access or modify the virtual volume and processing requests from the host system to create a new virtual volume (Fig.1; Fig. 3; Fig. 5; col 1, lines 35-67; col 5, lines 1-67).

Allowable Subject Matter

5.   Claims 12-30 and 39-45 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims and also overcomes the double patenting rejection.

The following is a statement of reasons for the indication of allowable subject matter:

The prior art of records Chandrasekaran does not disclose, teach or suggest the claimed limitations of (in combination with all other features in the claims) claims 12,27 or 39.

Points of Contact

6.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Apu M. Mofiz whose telephone number is (571) 272-

4080. The examiner can normally be reached on Monday – Thursday 8:00 A.M. to 4:30

P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Jeffrey Gaffin can be reached at (571) 272-4146. The fax numbers for the

group is (571) 273-8300.

Any inquiry of a general nature or relating to the status of this application should

be directed to the Group receptionist whose telephone number is (703) 305-9600.

Apu M. Mofiz
Primary Patent Examiner
Technology Center 2100

August 02,2006